

*Air Force Research Laboratory
Wright-Patterson AFB, Ohio*

Environmental, Safety and
Occupational Health (ESOH)
Newsletter



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Avoiding Chemical Exposure in the Laboratory

Working with chemicals is a daily activity for many researchers. Ensuring you're not exposed to unsafe levels of these chemicals should also be a daily activity. Dermal hazards refer to chemicals that can cause dermatitis or otherwise damage the skin, as well as to chemicals that can enter the body through intact skin and cause other toxic effects. Chemicals with a dermal hazard may also affect mucous membranes and the eyes, either by contact with vapors or by direct skin contact with the substance.

The three mechanisms of dermal exposure are either 1) direct contact (as from splashing or immersion), 2) indirect contact via a contaminated surface, or 3) being transported to the skin as a vapor or aerosol. Aerosols are sometimes created on purpose from spraying products or fluids, or incidentally such as from metal working fluids interacting with machinery. Aerosols tend to settle rapidly, sometimes making an increased separation between the worker and the work process a feasible control. However, aqueous mists or organic solvents can evaporate in a matter of seconds, leaving a progressively smaller, and therefore more concentrated and aerodynamically stable aerosol that can drift further than the larger droplets, and thus increasing the chances for worker exposure.



What can be done to reduce exposure to chemicals?

Substitution to a less toxic chemical is almost always a good option, unless the alternative chemical is much more volatile or the original chemical is critical to the application. Limit the inventory to chemicals and quantities necessary for laboratory activities. Inspect inventories periodically and dispose of outdated chemicals. (Stay on the lookout for chemicals that start to degrade, change color or form, begin to off-gas, or show any other indications of becoming unstable or dangerous to store or handle. These chemicals should be immediately brought to the attention of the chemical hygiene officer or supervisor.)

Engineering Controls: consideration should be given to re-designing the work process to avoid splashes or immersion. Limiting the use of aerosols to fume hoods or glove boxes is a way to enclose and isolate the chemical to avoid exposure. Use the hood for operations that may result in release of toxic chemical vapors or dust. As a rule of thumb, use a hood or other local ventilation device when working with any volatile substance with a Threshold Limit Value (TLV) of less than 50 ppm.

Confirm adequate hood performance before use. Keep hood closed at all times except when adjustments within the hood are being made. Keep materials stored in hoods to a minimum and do not allow them to block vents or air flow. Leave the hood "on" when it is not in active use if toxic substances are stored in it or if it is uncertain whether adequate general laboratory ventilation will be maintained when it is "off". Always have a contingency plan in the event of hood failure. Do not store chemicals or wastes in a fume hood.

Personal Protective Equipment (PPE): Where engineering controls are not feasible or fall short of ideal protection, personal protective equipment (PPE) in the form of chemical

protective gloves, eye protection, apron, and clothing should be selected. Assure that appropriate eye protection is worn by all persons, including visitors, where chemicals are stored or handled. At a minimum, safety glasses with side shields should be worn. Other eye protection may include goggles, face shields, etc., to be used as necessary based on potential hazard. Wear appropriate gloves when the potential for contact with toxic materials exists; inspect the gloves before each use, wash them before removal, and replace them periodically. (See the following for a good glove chart <http://www.safety.fsu.edu/chp.html#appendix6>.) Laboratory coats should be worn when working in the laboratory.



If you believe respiratory equipment is necessary because air contaminant concentrations are not sufficiently restricted by engineering controls, contact the Bioenvironmental Engineering office (255-6815) to have your workplace evaluated. They will determine if you need respiratory protection, and if so, you may be fit-tested, trained, and issued a respirator.

Avoid use of contact lenses in the laboratory unless necessary. Remove laboratory coats immediately upon significant contamination and decontaminate or dispose of properly.

Good Housekeeping: Keep the work area clean and uncluttered, with chemicals and equipment being properly labeled and stored. Clean up the work area on completion of an operation or at the end of each day. Avoid unnecessary exposure to chemicals by any route and encourage proper personnel hygiene (i.e. wash hands prior to leaving laboratory area). Do not smell or taste chemicals. Vent apparatus which may discharge toxic chemicals (vacuum pumps, distillation columns, etc.) into local exhaust devices. Inspect gloves and test glove boxes before use. Do not eat, drink, use tobacco products (smoke, chew, dip), chew gum, or apply cosmetics in areas where laboratory chemicals are present and wash hands before conducting these activities. Do not store food or beverages in refrigerators or glassware which have been used for laboratory operations.



The bottom line is to read your laboratory's Chemical Hygiene or HAZCOM plan and all operating procedures and follow them. If you have any questions or concerns, bring them up to your supervisor or chemical hygiene officer.

Resources:

Florida State University Chemical Hygiene Plan: <http://www.safety.fsu.edu/chp.html>
U.S. Dept of Labor, Occupational Safety and Health Administration:
<http://www.osha-slc.gov/SLTC/dermalexposure/index.html>

Holiday Safety Reminders

Do You Have a Safe Christmas Tree?

- * Inspect light cords for damage
- * Don't overload electrical circuits
- * Use UL approved lights
- * Don't put electrical cords under carpets or rugs
- * Keep electrical cords from becoming tripping hazards
- * Use indoor lights INDOORS and outdoor lights OUTDOORS
- * Turn off lights at bedtime and before leaving home
- * Keep live trees watered



Hosting a Party?

As a responsible host or hostess, you want to plan your party to assure two things. One is that your guests have a good time and the other is that only non-drinking, sober drivers get behind the wheel when your party ends. Alcohol affects people differently, but the way it works is predictable. Be alert to signs of alcohol impairment in each of your guests.

WATCH FOR CHANGES IN:

- * **COORDINATION** – stumbling, awkwardness, spilling, fumbling
- * **BEHAVIOR** – aggressiveness, loudness, excessive laughter or talkativeness, detachment, indifference
- * **SPEECH** – slurred, incoherent, or faltering



**** Only TIME will SOBER a guest ****

It's a myth that cold showers, fresh air or black coffee are cures for having drunk too much. A person's Blood Alcohol Content (BAC) is directly related to the amount of alcohol consumed.

REMEMBER, A person's judgment is one of the first things affected by alcohol consumption. If someone has to try to convince you that they're fine, they're probably not.

TEN NEW YEAR'S RESOLUTIONS:

"I resolve to..."

1. ...never drive when I've been drinking or am overly tired
2. ...wear my seatbelt every time I get in a vehicle
3. ...check my home smoke alarm every month
4. ...drive more slowly through parking areas and crosswalks
5. ...make sure my kids wear bicycle helmets when riding their bikes
6. ...walk to lunch - instead of driving
7. ...teach my children how to use the "911" emergency number
8. ...leave for work five minutes earlier so I won't be rushed
9. ...never pass cars on the roadways unless it's both safe and necessary
10. ...remove the frost/ice and fog from all windows before driving my car



What are your New Year's Safety Resolutions?

Thanks to Barry Moncrief from AFRL/IF for sharing some good driving safety info:

Driving Safely this Winter

This time of year brings worsening road conditions, shorter daylight hours, and holiday shoppers, partygoers, and travelers, all vying for the same roads. These issues combine to create more hazardous driving conditions for all of us. Planning ahead for extra time to get to your destinations is one great way to practice safe driving.



How well do you know your rules of the road? Attached is a link to a brief online refresher test from the Ohio BMV, it may help to remind you of some important safety rules. For answers to specific driving questions, a link to the online digest of motor vehicle laws is also attached, thanks.

Barry Moncrief
AFRL/IF ESOH Div Rep

Sample Ohio BMV Drivers Test: <http://www.state.oh.us/odps/division/bmv/SampleOLTest.htm>

Digest of Ohio Motor Vehicle Laws: <http://www.state.oh.us/odps/division/bmv/mvdigest.html>

Things to remember when on the road during winter weather:

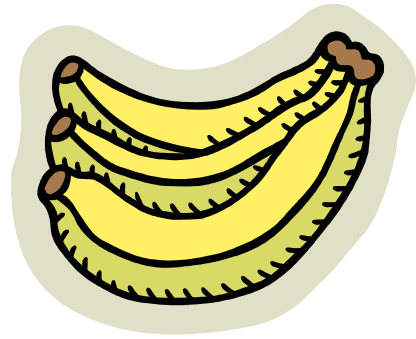


- 1) "Winterize" your car. Make sure your car is in good repair and ready for the winter. Get your car checked for proper fluid levels, tire pressure, new oil, proper tire tread, etc. Put some emergency supplies in your vehicle in case you are stranded: flares, flash light and extra batteries, shovel, ice scraper, nonperishable food, knife or multi-use tool, cell phone, blanket, boots, thermal clothing/hat/gloves, first aid kit, jumper cables, etc. These supplies will vary depending on how long you'll be driving and how far away from civilization you'll be.
- 2) **Before** you begin to drive, scrape your care and ensure your view out **all** windows is unimpaired. Remember to scrape ice and snow off mirrors, headlights, and taillights too.
- 3) Make sure you are alert enough to drive: you've had plenty of sleep and have not taken any medications, alcohol, or anything that could affect your judgment. **ALWAYS WEAR YOUR SEATBELT!**
- 4) Adjust your speed to the road conditions. The posted speed limit is for ideal conditions and will be too fast for rainy, snowy, or icy roads or in heavy traffic.
- 5) Maintain plenty of distance behind the vehicle in front of you, much more so in wet conditions. Even though some unsafe drivers will take this as a cue to cut in front of you, it's better than not leaving enough stopping room in the event the driver in front of you stops suddenly.
- 6) Use turn signals sooner than usual so other drivers have more time to react.
- 7) Avoid quick accelerations on slick roads as this will cause you to skid.
- 8) Beware of "black ice" on bridges, overpasses, underpasses, and shaded areas. If you hit a patch of ice, ease off accelerator and steer in the direction that the rear of the car is skidding.
- 9) For emergency braking in winter weather - Anti-lock brakes (ABS): Press down and hold. The ABS will "pump" for you. Non-ABS brakes: pump the brake pedal.
- 10) Stay home. This is always an option if conditions are too bad for driving!

A Banana a Day Keeps the Doctor Away?

Thanks to Mike Schumahcher, AFRL/PRTM for forwarding this article

Containing three natural sugars - sucrose, fructose and glucose - combined with fiber, a banana gives an instant, sustained and substantial boost of energy. Research has proven that just two bananas provide enough energy for a strenuous 90-minute workout. No wonder the banana is the number one fruit with the world's leading athletes. But energy isn't the only way a banana can help us keep fit. It can also help overcome or prevent a substantial number of illnesses and conditions, making it a must to add to our daily diet.



Depression: According to a recent survey undertaken by MIND amongst people suffering from depression, many felt much better after eating a banana. This is because bananas contain tryptophan, a type of protein that the body converts into serotonin, known to make you relax, improve your mood and generally make you feel happier.

Anemia: High in iron, bananas can stimulate the production of hemoglobin in the blood and so helps in cases of anemia.

Blood Pressure: This unique tropical fruit is extremely high in potassium yet low in salt, making it the perfect to beat blood pressure. So much so, the US Food and Drug Administration has just allowed the banana industry to make official claims for the fruit's ability to reduce the risk of blood pressure and stroke.

Brain Power: 200 students at a Twickenham (Middlesex) school were helped through their exams this year by eating bananas at breakfast, break, and lunch in a bid to boost their brain power. Research has shown that the potassium-packed fruit can assist learning by making pupils more alert.

Constipation: High in fiber, including bananas in the diet can help restore normal bowel action, helping to overcome the problem without resorting to laxatives.

Hangovers: One of the quickest ways of curing a hangover is to make a banana milkshake, sweetened with honey. The banana calms the stomach and, with the help of the honey, builds up depleted blood sugar levels, while the milk soothes and re-hydrates your system.

Heartburn: Bananas have a natural antacid effect in the body, so if you suffer from heartburn, try eating a banana for soothing relief.

Morning Sickness: Snacking on bananas between meals helps to keep blood sugar levels up and avoid morning sickness.

Mosquito Bites: Before reaching for the insect bite cream, try rubbing the affected area with the inside of a banana skin. Many people find it amazingly successful at reducing swelling and irritation.

Nerves: Bananas are high in B vitamins that help calm the nervous system.

Ulcers: The banana is used as the dietary food against intestinal disorders because of its soft texture and smoothness. It is the only raw fruit that can be eaten without distress in over-chronicler cases. It also neutralizes over-acidity and reduces irritation by coating the lining of the stomach.

Seasonal Affective Disorder (SAD): Bananas can help SAD sufferers because they contain the natural mood enhancer, tryptophan.

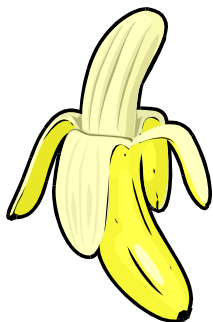
Smoking: Bananas can also help people trying to give up smoking. The B6, B12 they contain, as well as the potassium and magnesium found in them, help the body recover from the effects of nicotine withdrawal.

Stress: Potassium is a vital mineral, which helps normalize the heartbeat, sends oxygen to the brain and regulates your body's water balance. When we are stressed, our metabolic rate rises, thereby reducing our potassium levels. These can be re-balanced with the help of a high-potassium banana snack.

Strokes: According to research in "The New England Journal of Medicine," eating bananas as part of a regular diet can cut the risk of death by strokes by as much as 40%!

Warts: Those keen on natural alternatives swear that if you want to kill off a wart, take a piece of banana skin and place it on the wart, with the yellow side out. Carefully hold the skin in place with a plaster or surgical tape!

So, you see, a banana really is a natural remedy for many ills. When you compare it to an apple, it has four times the protein, twice the carbohydrate, three times the phosphorus, five times the vitamin A and iron, and twice the other vitamins and minerals. It is also rich in potassium and is one of the best value foods around.



So maybe its time to change that well-known phrase so that we say, "A banana a day keeps the doctor away!"

Source: <http://www.albrightfarm.com/tip.html>



**GIVE THE GIFT OF LIFE
GIVE BLOOD**

ASBP

Trying to figure out that perfect gift to give for Christmas? Give something really important . . .

Give the gift of life.

Donate Blood!

It is especially important for people to donate blood during the holidays! Donations consistently drop during this busy time of year but the requirements for blood are still as great as ever. So please, if you are able to donate blood, do so this month and bring a friend!

Come to the next AFRL Blood Drive:

AFRL/ML (Bldg 653) Cafetorium

17 and 30 Dec 03

0900-1400

(if you can't make this date, call 71038 for other locations/dates)

Mark your calendar for these 2004 dates:

24 Feb, 4 May

INCENTIVE: There will be a drawing for a leather briefcase given away during the December blood drives.



Click here to see if you are **eligible to donate:**

http://tricare.osd.mil/asbpo/donor_info/deferral.htm

Visit the **Armed Services Blood Program** website for more info on donating blood: <http://tricare.osd.mil/asbpo/>

Or call the Donor Center at 70580/ 71038
or contact Mary Shelly at 255-9000.



ESOH Training



RCRA Hazardous Waste Training: Mandatory for all employees who generate hazardous waste. Issue Point (IP) Managers, Hazwaste generators, primary and alternate Initial Accumulation Point (IAP) managers, Unit Environmental Coordinators (UECs), and supervisors of all these individuals must take annual RCRA training.

2004 Initial Training: 15 Jan, 18 Mar, 20 May, 15 Jul, 16 Sep, 18 Nov
Schedule with Susan Dilworth at 77454

2004 Annual Refresher Training - Organizations other than AFRL
19 Feb, 15 Apr, 17 Jun, 19 Aug, 21 Oct, 16 Dec
Schedule with Susan Dilworth at 77454

2004 Annual Refresher Training - AFRL Only
28 Jan, 24 Mar, 26 May, 21 Jul, 22 Sep, 16 Nov
Schedule with Mary Shelly @ 59000 or via email



Environmental Compliance, Assessment and Management Program (ECAMP) Training **(ENV220)**

This course is designed to give students knowledge to successfully plan and execute an internal or external compliance assessment (such as ECAMP), prepare required reports, and direct the follow-up actions. For more information on the course see AFIT's website. <http://cess.afit.af.mil/>

Sign up for the course through your Training Focal Point (TFP). Contractor registration should be coordinated through their assigned organization's TFP. Additional paperwork is required for contractors to attend this course. **For more information contact Karen Thompson, 88 ABW/EMO at 75899**



Environmental, Safety and Occupational Health (ESOH) Awareness Training

Sign up with 88 ABW/ EM, Treva Bashore, 76391

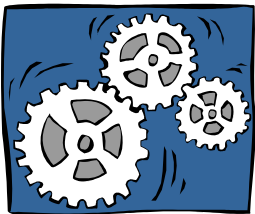
This course covers a broad range of topics and requirements that apply to all of us at Wright-Patterson, including mandatory training requirements. This course is highly recommended for all employees on Base, including contractors. Supervisors are highly encouraged to attend.



CPR Training

Required for electrical and confined space workers per 29 CFR 1910.151. The American Heart Association recommends CPR refresher training every two years and the American Red Cross recommends CPR refresher training every year. CPR training (per the American Heart Association) is **taught at the Base Hospital every Tuesday** provided that there are enough students.

Contact Marcia Wilson at 79347 or Karen Turner 48384 (Bldg 675 Area B)



Operational Risk Management (ORM)

To sign up, contact Chuck Swankhaus at 43390

ORM is a tool anyone can use to help with planning and decision-making in order to reduce or eliminate potential risks and increase efficiency. The Safety Office (ASC/SEG) has made two ORM briefings available over the Internet. Click on the following links to learn more about ORM:

Awareness Level ORM Training:

https://www.asc.wpafb.af.mil/asc/safety/orm/exec_training.ppt

Level II ORM Training:

https://www.asc.wpafb.af.mil/asc/safety/orm/orm_level_ii_training.ppt

2004 Public Health Training

To sign up for training or schedule a class at your organization, please contact Public Health at 255-2515.



Hazardous Communication (HAZCOM)

5 Feb, 22 Apr, 22 Jul, 29 Oct 04

This course is a Train-the-Trainer course that provides mandatory HAZCOM training to supervisors and safety reps responsible for their organization's HAZCOM program. Must have previously had general Hazcom training. Per 29 CFR 1910.1200, Hazcom training is required for all employees who use, handle, or may be exposed to hazardous materials upon initial assignment to that job (if not already receiving Chemical Hygiene Training per 29 CFR 1910.1450). HAZCOM

refresher training is required whenever a new chemical or hazardous process is introduced into the work area or it is evident an employee needs refresher training. Otherwise, there is no "annual" requirement for HAZCOM training.

Asbestos Awareness

25 Mar, 24 Jun, 23 Sep, 9 Dec 04

Hearing Conservation

18 Mar, 6 May, 16 Jul, 16 Sep, 11 Nov 04

Hearing Conservation - Supervisor

12 Feb, 15 Apr, 24 Jun, 30 Sep 04

PUBLIC HEALTH TRAINING AVAILABLE UPON REQUEST

Benzene	Cadmium
Carbon monoxide	Chemical Hygiene
Cold Stress	Ergonomics
Formaldehyde	Heat Stress
Laser Hazard	Lead
Personal Protective Equipment	Reproductive Hazards in the
Respiratory Protection	Workplace
Universal Precautions/ Bloodborne Pathogens	



Health and Wellness Center (HAWC) Traveling Show Hits the Road

Looking for an informative presentation for your next commander's call, off-site, or training session? Let the Health and Wellness Center take the pressure off your scheduling worries! The HAWC has a variety of programs and classes to make your next event a hit. To schedule a presentation, all you need is at least 15 participants and the necessary audiovisual equipment, and the HAWC will come to you. At least three weeks' advance notice is requested.

Here are some of the Public Health training topics:

Stress Management

dealing with difficult people, surviving change, surviving the holidays, resolutions....

Tobacco Cessation

tobacco use and options for quitting

Nutrition

fad diets, winning at losing, healthy eating for a healthy heart, eating on the run...

Fitness

exercise after 40, starting an exercise program, hypertension and exercise, cholesterol and exercise...

**To get the latest schedule of classes or schedule a presentation
please call 904-WELL.**

WPAFB ESOH WEBSITES:

ENVIRONMENTAL MANAGEMENT: <http://www.abwem.wpafb.af.mil/em/>
The Office of Environmental Management (88 ABW/EM) has changed their phone numbers. For a complete listing, please see their website:
https://wrigem.wpafb.af.mil/EM/staff/index.cfm?fuseaction=main&obj_id=93

SAFETY: <https://www.asc.wpafb.af.mil/asc/safety/index.html>

PUBLIC HEALTH: <https://wpmc3.wpafb.af.mil/amds/ph/index.htm>

BIOENVIRONMENTAL ENGINEERING: <https://www.bio.wpafb.af.mil/>

HEALTH AND WELLNESS CENTER (HAWC):
<http://wpmc1.wpafb.af.mil/pages/hawc/>

CAP OFFICE: (6-2860) <https://www.afmc-mil.wpafb.af.mil/ESC/MM/CAP/>

Unit Safety Reps: please post this ESOH newsletter on your safety bulletin boards.

If you have any suggestions for this newsletter or if you would like to be added / removed from the distribution list, please contact [Mary Shelly](#) via email or at 59000.

